

What is claimed is:

1. A method for printing indicium on an article comprising steps of:

providing a supply of ink comprising a multi-signal transmission ink which is adapted to provide an optically visual signal when viewed in normal daylight and adapted to provide a different signal which is adapted to be machine readable; and

printing at least a portion of the indicium on the article by halftone printing the multi-signal transmission ink, wherein the portion is adapted to be visually observable in normal daylight, and wherein the portion is adapted to be read as a non-halftoned signal by a machine even though the portion is halftone printed.

2. A method as in claim 1 wherein the multi-signal transmission ink comprises fluorescent ink.

3. A method as in claim 1 wherein the multi-signal transmission ink comprises color fluorescent ink.

4. A method as in claim 3 wherein the color fluorescent ink comprises a rare earth complex.

5. A method as in claim 3 wherein the color fluorescent ink provides an increased percentage of print growth relative to non-fluorescent ink to provide enlarged print growth per pixel.

6. A method as in claim 1 wherein the multi-signal transmission ink comprises phosphorescent ink.

7. A method as in claim 1 wherein the step of printing comprises halftone printing with a fill of less than 50 percent.

8. A method as in claim 1 wherein the step of printing comprises halftone printing with a fill of about 15 percent.

9. A method as in claim 1 wherein the different signal comprises a magnetic signal or an electrical signal.

10. A method for printing indicium on an article comprising steps of:

printing the indicium from a supply of ink comprising a fluorescent ink; and

printing at least a portion of the indicium on the article by dithering the fluorescent ink onto the article with a fill amount of at least a 50 percent reduction in a number of dots of the portion such that a reduced amount of fluorescent ink is used to print the indicium, and wherein the fluorescent ink provides a fluorescence intensity larger than one-half the fluorescence intensity of the portion if the portion was printed with twice the number of dots.

11. A method as in claim 10 wherein the fluorescent ink comprises color fluorescent ink.

12. A method as in claim 11 wherein the color fluorescent ink comprises a rare earth complex.

13. A method as in claim 11 wherein the color fluorescent ink provides an increased percentage of print growth relative to non-fluorescent ink to provide enlarged print growth per pixel.

14. A method as in claim 10 wherein the step of printing comprises halftone printing with a fill of about 15 percent.

15. A method for printing indicium on an article comprising steps of:

providing a supply of ink comprising a color fluorescent ink; and

printing at least a portion of the indicium on the article by halftone printing the fluorescent ink onto the article, wherein a percentage of reduction in fluorescence intensity of the portion caused by the halftone printing is less than a percentage of increase in reflection of the portion caused by the halftone printing.

16. A method as in claim 15 wherein the color fluorescent ink comprises a rare earth complex.

17. A method as in claim 15 wherein the color fluorescent ink provides an increased percentage of print growth relative to non-fluorescent ink to provide enlarged print growth per pixel.

18. A method as in claim 15 wherein the step of printing comprises halftone printing with a fill of about 15 percent.

19. A method as in claim 15 wherein the step of printing comprises halftone printing with a fill of less than 50 percent.

20. A method as in claim 15 wherein the step of printing comprises halftone printing with a fill of between about 15 to 45 percent.

21. A method for printing indicium on an article comprising steps of:

determining an image to be printed as at least a part of the indicium;

determining a pattern of dots to be printed to form a halftone image of the image based upon use of luminescent ink as an ink to print the halftone image; and

printing the pattern of dots to form the halftone image by a print head, wherein the halftone image is filled between about 10 to 35 percent, and wherein luminescence of dots printed with the luminescent ink produces a combined luminescence brightness of about 35 to 80 percent of total possible brightness if the image was printed without halftone printing.

22. A method as in claim 21 wherein the luminescent ink comprises fluorescent ink.

23. A method as in claim 21 wherein the luminescent ink comprises color fluorescent ink.

24. A method as in claim 21 wherein the luminescent ink comprises a rare earth complex.

25. A method as in claim 21 wherein the luminescent ink comprises phosphorescent ink.

26. A printed indicium comprising a halftone image printed with color luminescent ink to form a first halftone image which is adapted to be read in normal daylight and a second halftone image which is luminescent, wherein the second halftone image provides a ratio of luminescence intensity relative to quantity of the color luminescent ink which is larger than a ratio of the luminescence intensity relative to the quantity of the color luminescent ink if the halftone image was printed with a greater percent of a fill quantity of the color luminescent ink.

27. A printed indicium as in claim 26 wherein the color luminescent ink comprises fluorescent ink.

28. A printed indicium as in claim 26 wherein the color luminescent ink comprises phosphorescent ink.

29. A printed indicium as in claim 26 wherein the halftone image is printed with a halftone fill of less than 50 percent.

30. A printed indicium as in claim 29 wherein the halftone image is printed with a halftone fill of between about 15 to 45 percent.

31. A printed indicium as in claim 29 wherein the halftone image is printed with a halftone fill of about 15 percent.

32. A postage meter comprising:

a supply of color luminescent ink; and

a print head-for printing the color luminescent ink onto an article, the print head being adapted for halftone printing, wherein the postage meter is adapted to print the color luminescent ink as part of postage indicium as a halftone image such that the halftone image is both visually observable in normal daylight and observable in luminescence.

33. A postage meter as in claim 32 wherein the supply of color luminescent ink comprises a supply of color fluorescent ink.

34. A postage meter as in claim 33 wherein the supply of color fluorescent ink comprises a black fluorescent ink.

35. A postage meter as in claim 33 wherein the color fluorescent ink comprises a rare earth complex.

36. A postage meter as in claim 32 wherein the color luminescent ink comprises phosphorescent ink.

37. A method for reading indicium on an article comprising steps of:

providing a supply of ink comprising a luminescent ink;

printing at least a portion of the indicium on the article by halftone printing or gray scale printing, wherein the step of printing uses less of the ink than if the indicium was printed without halftone or gray scale printing; and

machine reading the portion of the indicium by subjecting the portion of the indicium to a source of excitation and causing the portion to illuminate.

38. A method as in claim 37 wherein the step of providing a supply of ink comprises providing the ink as an invisible ink which is substantially invisible in daylight.

39. A method as in claim 37 wherein the step of providing a supply of ink comprises providing the ink as a fluorescent ink.

40. A method as in claim 37 wherein the step of providing a supply of ink comprises providing the ink with a rare earth complex.

41. A method of reading indicium on an article comprising steps of:

printing the indicium with luminescent ink;

reading the indicium while the indicium is subjected to a source of excitation radiation; and

reading the indicium after the indicium is no longer being subjected to the source of excitation radiation.

42. A method as in claim 41 wherein the step of printing the indicium with luminescent ink comprises printing the indicium with fluorescent ink.

43. A method as in claim 41 further comprising providing the luminescent ink with a rare earth complex.